AT&T Upfront Automation (UFA). This technology was invented by AT&T and has not been duplicated by any other provider. With UFA, both voice and TTY callers are able to immediately and directly enter the number they wish to call. They don't have to wait for the Relay Operator to come on the line and request it. What are the advantages of UFA?

a. Less time interacting between the Relay Operator and the caller which saves time during call setup and saves the state billable minutes

b. Since the caller directly enters the number they wish to call themselves, there aren't incidents where the Relay Operator transposes the number to dial. Entering the wrong number results in redials and new attempts to call to the correct number. With UFA, the data entry errors are nearly eliminated resulting in less attempts to call out and less billable time to the state.

c. Calls were UFA is utilized arrive to the Relay Operator already set up and with the press of one button, the Relay Operator dials the call reducing call set up time and saving billable time to the state.

Quick Launch. This is another technological feature developed by our AT&T Relay engineers. With Quick Launch, any caller that utilizes our UFA feature and does not require special assistance and does not have a Relay Customer Profile (RCP), will have the call automatically dialed at the same time that the Relay Operator is connected to the call. With other relay providers, the Relay Operator controls when that call is actually launched or dialed out. Potentially, the Relay Operator could wait several seconds before processing the call. Those seconds can add up at the end of the month.

Automatic activation of Carryover functionality. This is another feature developed by our AT&T engineers that has been often imitated but not duplicated. With our sophisticated relay platform, any caller who is profiled as a VCO users (or HCO user) will have the carryover feature automatically activated. The VCO user can begin speaking as soon as they see "VCO ON GA."

The VCO user does not need to wait for the Relay Operator to come on the line in order to request VCO. With our automatic carryover feature, the VCO user can immediately begin voicing their number or their conversation without having to type. The beauty of our technology is that this works whether the profiled VCO user is the call originator or the call receiver. This is one more way in which our technology saves time and therefore, billable minutes to the state.

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Don't be misled in thinking that an industry report that attempts to compare industry providers is a measure of efficiency. We have actual technology that we have implemented and have shown proven results in the area of efficiency.

We have several other features we can implement if the State so desires that will also improve "call wrap up" time and result in even more savings on billable time.

4.1.4 MULTIPLE/ADDITIONAL SERVICES (VALUE ADDED)

[illegible faded text]

AT&T Response:

AT&T has read and meets this requirement.

As the state relay provider for Colorado, we will strive to bring your relay users all the features and service offered to other states at no additional cost. For example, if one of our other state TRS contracts requires a feature not currently offered in Colorado, we will do everything we can to deliver the same feature at no additional cost. For example, we trialed a new Video Assisted Speech-to-Speech service for California and are now working to bring that capability to our other states at no additional cost. Below is a short list of other features not currently required in your RFP that we will bring to Colorado if awarded the contract:

a) **Video-Assisted Speech to Speech.** An enhanced way for speech to speech users to communicate with the relay operator via an internet connection and a video phone or web camera. This enables the relay operator to see facial and hand gestures to facilitate communication.

b) **Last Number Dialed.** Enables profiled relay users to select an option that allows them to ask the CA to dial their last number placed by the relay service. We

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stored this information in our secure database for up to twenty four hours after the caller has disconnected.

c) **Expanded list of speed dials on Customer Profiles.** We allow profiled users to have access to up to 100 frequently called numbers. More than any other relay provider.

d) **Multi-user Profiles.** AT&T was the first provider to make this feature available which allows households with multiple relay users to each have their own profile.

e) **First Thought Message for STS users.** This feature allows profiled STS users to provide the first message they would like to convey to the receiver of a STS call. This can include a greeting, message, or instructions to the call receiver.

f) **Follow Me for STS users.** Allows STS users to designate their "can be reached" numbers during specified days and hours of the week.

4.1.5 ADDITIONAL REQUIREMENTS FOR FCC CERTIFICATION

Offerors shall identify other FCC requirements for certification related to Access, Cost, operational, technical or functional performances not otherwise listed in Section 4 of the RFP and specify how those requirements will be met.

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AT&T Response:

AT&T has read and meets this requirement.

The FCC, through recent orders, has added some additional requirements for relay providers that should be included in your state's certification requirements and which AT&T is committed to providing in order for the State of Colorado Relay Program to retain its FCC certification.

Following are some these new requirements that were included in the April 6, 2011 Release of the **Report & Order (CG 10-51)** that apply to all relay services including traditional relay:

- Whistleblower Protection (Para 64-71)

- Automated Call Data Collection (Para. 76-79)

4.1.6 LOCATION AND CAPABILITIES OF RELAY CENTER(S)

[illegible faded text]

AT&T Response:

AT&T has read and meets this requirement.

At this time we will not be proposing an instate call center for Colorado Relay. We intend to route the Colorado Relay through our existing national relay team which has more than

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enough capacity for the forecasted volumes. In the unlikely event we find we are nearing our threshold for capacity in the centers, we have enough space in these existing call centers to build out. Additionally, the build out work would be done by technicians and experienced work planning engineers all part of the AT&T corporate real estate (CRE) organization. Later, our expert team of service managers and developers would install the relay platforms and call center equipment. Following please find more in-depth responses to the requirements in this section.

at&t
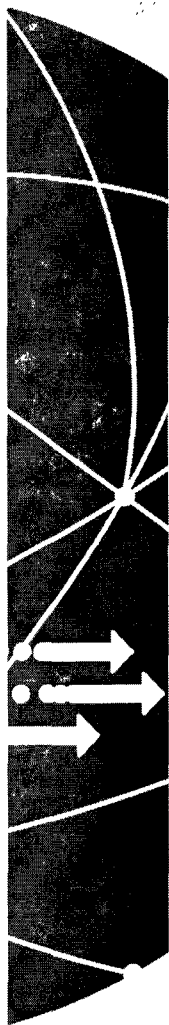
4.1.6.1 Building Requirements. [illegible text]

AT&T Response:

AT&T has read and meets this requirement.

Our current National Relay Team is totally scalable and currently has the capacity to handle twice the number of calls we handle today.

Our SNAP platform is also fully scalable. We currently handle more than 12M minutes and we have the capability to handle twice that amount. Considering the decline in TRS minutes, along with our scalability, we don't anticipate any technical concerns with meeting this contractual requirement in our existing call centers.

1. Initially, we look at the spare capacity of our platform in steady-state operation. This includes CA positions, floor space availability, back office computing, power, circuits and networking, and finally the availability of trained CA staff.

2. Secondly, we overlay the new Colorado contract requirements and the estimated traffic expectations over the course of the contract. We complete mathematical modeling and proprietary algorithms while adjusting for time-zone differences; evaluating what our new busy-hour requirements and system loads will be.

3. Finally, we provision whatever elements we need to continue operating with the new contracted traffic again at no more than a 50% peak capacity. That may include anything from more modems, more CPUs, more UPS capacity, additional networks (trunking), new CA hires, and possibly even a new call center.

By following this fundamental engineering build-out philosophy, AT&T's technical topology continues to have the ability to accept new customers and contracts without

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massive disruptions in service or delays in provisioning new equipment or software. In over 24 years, AT&T Relay has never had a service outage due to engineering or scaling changes (up or down) within our national relay complex.

As stated earlier, we operate at no more than a 50% capacity. At 50%, we can afford to lose half of our system and still handle all calls. At a higher capacity level, say 75%, you can only lose 25% of the system to be able to handle all calls. We have a very detailed expansion plan model we use for annual planning to look at total traffic and capacity and if our projections show that we will exceed 50% capacity we put plans into place to increase capacity as necessary.

We currently have capacity to accommodate additional workstations in each of our centers as follows:

Augusta, GA has 43 workstations in operation with the capacity for an additional 42 workstations

Newcastle, PA has 65 workstations in operation with the capacity for an additional 52 workstations

San Antonio, TX Spanish call center has 6 workstations in operation with the capacity for an additional 6 workstations

Norton, VA has 21 workstations in operation with the capacity for an additional 23 workstations

We would gladly host a visit for the SRA and its delegates to visit one or all of our call centers to demonstrate how capacity and the space we currently have for building out.

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4.1.6.2 Telecommunications Service Priority (TSP). [illegible text]

AT&T Response:

AT&T has read and meets this requirement.

We take pride in stating that we were the **first relay provider** to voluntarily have all of our call centers designated as Telecommunications Service Priority in 2005. We did not wait for the state relay administrators to ask us to do this. We did it because we knew it was the right thing to do. We will continue to maintain all the call centers that will be used to handle Colorado traditional relay under TSP.

The next page provides a copy of the press release that was made by State of Maryland which was the first state to have TSP designation while AT&T was the state relay provider.

MARYLAND

DEPARTMENT OF
BUDGET & MANAGEMENT

ROBERT L. EHRLICH, JR.
Governor

MICHAEL S. STEELE
Lieutenant Governor

JAMES C. DIPAULA, JR.
Secretary

CECILIA JANUSZKIEWICZ
Deputy Secretary

FOR IMMEDIATE RELEASE
March 17, 2005

Media Contact:
Nancy Seidman, Maryland Relay
410-767-6962; nancy@mdrelay.org

Maryland Relay Users to Benefit from FCC-Launched Initiative

Maryland is First State in Nation to Implement Telecommunications Service Priority Program

(Baltimore, MD) – Through the efforts of the Ehrlich-Steele Administration, Maryland Relay, the telecommunications system that provides telephone access between the deaf, hard of hearing, DeafBlind and speech disabled citizens of the state and those who do not have a disability, announced today that it is the first state relay center in the nation to be enrolled in the FCC's Telecommunications Service Priority (TSP) Program.

The FCC initially established the TSP Program in 1988 to establish a priority of restoration of telephone service to critical facilities and agencies, at a time when telecommunications repair companies are typically overburdened with service requests. The program presently restores telephone services most critical to national and homeland security on a priority basis in the event of a national crisis. Recently, the FCC has partnered with the Department of Homeland Security to increase TSP participation.

With the program successfully implemented in Maryland, Maryland Relay users be able to make and receive calls in emergencies, just like standard telephone users in the same calling area.

"Relay facilities are essential in ensuring reliable, effective communication between people with hearing and speech disabilities and emergency services or other people," says Brenda Kelly-Frey, director of Telecommunications Access of Maryland (TAM), a public service provided by the Ehrlich-Steele administration. "In the event of a disaster, it's vital that all appropriate steps be taken to ensure that service to relay centers is restored as soon as possible."

The Baltimore-City-based Maryland Relay is now assured that when service is disrupted, it will receive full attention for priority restoration before any non-TSP service.

About Maryland Relay
Maryland Relay, a public service provided by the Ehrlich –Steele Administration and overseen by TAM – Telecommunications Access of Maryland – is a program under the State Department of Budget and Management. Maryland Relay is designed for any deaf, hard of hearing, DeafBlind or speech disabled citizen of the state who wishes to communicate over the telephone with a hearing person or persons. To make a Maryland Relay call, simply dial 7-1-1 from any phone. All calls are handled with the strictest confidentiality and there are no setup fees or monthly charges. Please visit www.mdrelay.org for further information.

To interview a Maryland Relay representative, please contact Nancy Seidman, Public Relations Coordinator with Maryland Relay, at 410-767-0962 or seidman@dbm.state.md.us

~Effective Resource Management~
301 W. Preston Street, Suite 1005A, Baltimore, MD 21201
Tel. (410) 767-0969 (Voice/TTY) • Fax (410) 767-4276 • Toll Free. 1 (800) 552-7724 (Voice/TTY)
http://www.dbm.maryland.gov

4.1.6.3 Location. [illegible]

AT&T Response:

AT&T has read and meets this requirement.

In order to provide the relay users with the most efficient service at the lowest possible cost to the state, our proposal will route Colorado Relay calls across our National Relay Team ("NRT") 24 hours a day/7 days a week. The NRT consists of three well-staffed and experienced call centers which are **all located in the United States and are staffed with AT&T employees** – not contractors:

New Castle, Pennsylvania

Augusta, Georgia

San Antonio, Texas (Spanish Relay Service)

With more than 300 experienced CAs working across these three centers, Colorado Relay users will experience a high level of confidence that their relay call will be promptly answered and placed.

CapTel

CapTel will be provided from the CapTel Service Relay Center located at 5801 Research Park Blvd., Madison, WI 53717 and at 310 W. Wisconsin Ave. Suite 1200 West Milwaukee, WI 53203.

The following provides information for the CapTel call centers:

- The two Captel call centers are located in Madison Wisconsin and Milwaukee Wisconsin in stand-alone buildings with other businesses or departments co-located.

- Floor locations are: Madison call center = 1st, 2nd and 3rd floors, Milwaukee call center 12th floor.

- CTI's Captel Centers are constructed and operated in such a manner that access to operator positions is denied to the public and unauthorized employees of CTI and the TRS Provider.

4.1.6.4 Equipment. Contractor shall furnish all necessary telecommunications equipment and provide and arrange for all telephone service in- and out-of service order. All transmission circuits shall meet or exceed interexchange communications accuracy standards. The system must have a telecommunications system for receiving and transmitting in both Baudot and ASCII codes. Relay system must be capable of automatically identifying incoming TTY signals at 45.45 and 50 bps.

AT&T Response:

AT&T has read and meets this requirement.

We will furnish all necessary telecommunications equipment and software capable of full and normal communication with inbound callers and outbound called parties compatible with relay equipment commonly used and at speeds generally used for the duration of the contract. This includes support for TTY, voice, and computer users via these protocols: voice (inc. STS), public switched network TTY, Baudot TTY, TurboCode®, ASCII Computer, and ASCII. AT&T's equipment automatically adjusts to match the protocol and speed of the TRS user's equipment. No manual intervention by the CA is required for our system to effectively communicate with the TRS user. Our Relay service is not device centric and is compatible with the basic protocol of TDDs.

The circuits used in the AT&T relay call centers meet or exceed the industry standards as outlined in the American National Standards Institute – Network Performance – Switched Exchange Access Network Transmission specifications (ANSI T1.506-1997). These are as follows for standards for transmission characteristics:

1. American National Standards Institute/Electronic Industries Association (ANSI/EIA) PBX standard TIA/EIA – 464B.

2. American National Standards Institute- Network Performance- Switched Exchange Access Network Transmission Specifications (ANSI T1.506- 1997)

3. ANSI T1.508-1998 Revision, re-designation and consolidation of ANSI T1.508-1992 and ANSI T1.508a- 1993 << American National Standards for Telecommunications Loss Plan for Evolving Digital Networks Secretariat Alliance for Telecommunications Industry

In the event that ANSI amends or changes these standards, we will also change our standards to meet all and any amended standards throughout the contract period.

AT&T is constantly improving its networks and systems to ensure our technology remains at the top of performance and our systems are properly staged to handle any relay traffic patterns. Over the past few years, we have:
- Upgraded our Avaya Switches (PBX) at $800,000 per switch
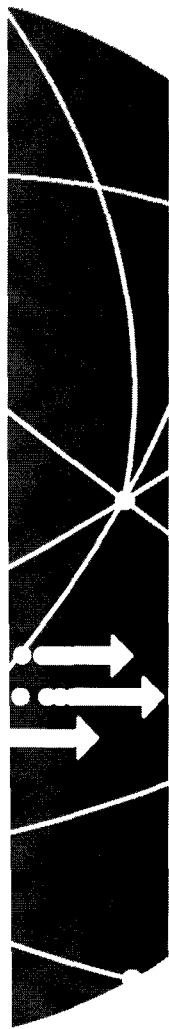- Upgraded all of our firewalls and routers at a cost of approximately $200,000

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- Completed half of our CA Position Replacement Program, with a completion planned for 3Q1012 at a total cost of $1,000,000

AT&T's relay platform employs a very sophisticated system architecture that enables flexible configuration while maintaining a high degree of reliability. This architecture has been field-proven by more than 20 years of experience providing relay to numerous states and NECA.

Here's how we'll support the Colorado Relay environment.

AT&T Relay Service Technical Infrastructure At Work
1. Our platform takes customer dialed calls (7-1-1 or 800 numbers) and routes them to the call center best suited to perform and the CA best trained to handle the particular call type.
2. At our call center, we use both a customer profile database (voluntary for callers) and automated systems to determine how best to handle the call and the forward number desired before the call routes to the CA.
3. Typically, we dial the forward number in less than three seconds, and we connect the parties almost immediately.
4. After the call, our system sends a call detail record with more than 130 fields to a central database computer that compiles records from all AT&T call centers. This assures flexible and integrated real-time reports enabling call center managers to monitor performance and immediately adjust staffing as necessary.

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AT&T Relay Service Technical Infrastructure

AT&T's Relay Service Technical Infrastructure: Redundancy and agility built into our infrastructure deliver outstanding performance for average speed of answer and far party connection. These attributes support functional equivalency for your relay callers.

With our comprehensive scope of services, AT&T is positioned to and will deliver the benefits of efficiency, streamlined coordination, common methods and processes, and compatible personnel to exceed your requirements for the envisioned environment for Colorado Relay.

AT&T uses equipment and software that are capable of full and normal communication with relay equipment commonly in use and at speeds generally at use.

AT&T will furnish all necessary telecommunications equipment and software capable of full and normal communication with inbound callers and outbound called parties compatible with relay equipment commonly used and at speeds generally used for duration of the contract. This includes support for TTY, voice, and computer users via these protocols: voice (inc. STS), public switched network TTY, Baudot TTY, TurboCode®, 1TTY, ASCII Computer, and ASCII. AT&T's equipment automatically adjusts to match the protocol and speed of the TRS user's equipment. No manual
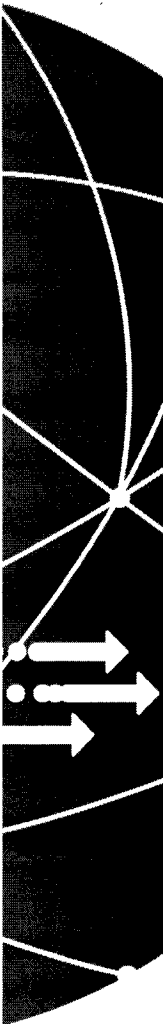
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intervention by the CA is required for our system to effectively communicate with the TRS user.

We use Ultratec™ modems exclusively. These modems were designed in joint cooperation between Ultratec™ and AT&T Bell Laboratories to meet the stringent AT&T data transmission quality requirements. By partnering with Ultratec™, the industry leader in ASCII/Baudot modems, attributes such as TurboCode® become available to our customers immediately after introductions. AT&T relay centers are equipped and capable of handling any modem speed generally in use.

AT&T has a long and successful relationship with Ultratec, the industry leader in manufacturing and providing ASCII/Baudot modems. This partnership enabled us to be the first relay provider to provide enhanced modalities like TurboCode® and the "interrupt" capability to all our customers across all our contracts. We did this without incidental charges that would "nickel and dime" our state customers. AT&T will continue to explore opportunities to enhance the communication modalities of TTY users and relay users to improve their relay call experience and move them closer to functional equivalence.

AT&T uses Signaling System 7 (SS7) as an out-of-band signaling method, ensuring that all calls are routed quickly and accurately. In addition, we use Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI) protocol between the 4ESS switch and the relay center's PBX and Automatic Call Distributor (ACD).

The communication between our Intelligent Call Router (ICR) and the AT&T network is all SS7. This protocol provides Automatic Number Identification (ANI), calling party number (CPN), originating line screening (OLS), and privacy or blocking information for all inbound calls in the same manner as non-relay callers who reach the regular "0" or "00" operator. The TRS caller's phone number is not passed on to the called party if the calling party has Caller ID blocking invoked by his/her local telephone company. Following is a diagram which further illustrates the call flow we describe here.

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AT&T Relay Service
Network Configuration

AT&T provides fully functional SS7 capability for calls within our network, thereby possessing the ability to transfer calls in full compliance with 47CFR §64.1600 of the FCC's Rules to achieve functional equivalence.

We offer one additional feature with our True Caller ID solution -- this feature is not currently available through any other relay provider. Profiled callers may select which number they wish to be transmitted to the called party. Profiled callers may have their telephone number sent or the Relay Service's generic telephone number sent. We developed this feature because many relay customers prefer to give the called party a "forewarning" that the call is coming through relay.

The network and facilities that support our Relay Service will meet all the following measures and standards for transmission characteristics:

* American National Standards Institute/Electronic Industries Association (ANSI/EIA) PBX standard TIA/EIA – 464B.

* American National Standards Institute- Network Performance- Switched Exchange Access Network Transmission Specifications (ANSI T1.506- 1997)

* ANSI T1.508-1998 Revision, re-designation and consolidation of ANSI T1.508-1992 and ANSI T1.508a- 1993 << American National Standards for Telecommunications Loss Plan for Evolving Digital Networks Secretariat Alliance for Telecommunications Industry

The circuits that we will provide are ISDN MegaCom 800, which will transverse on the Software Defined Network (SDN) within the AT&T telecommunications architecture.

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These circuits comply with a grade-of-service of P.01, which provides a functionally equivalent probability of a fast busy as one might encounter on the overall voice network.

Redundancy and agility built into our infrastructure deliver outstanding performance for average speed of answer and far party connection. These attributes support functional equivalency for your relay callers.

AT&T is constantly improving its networks and systems to ensure our technology remains at the top of performance and our systems are properly staged to handle any relay traffic patterns. Over the past few years, we have:
- Upgraded our Avaya Switches (PBX) at $800,000 per switch
- Upgraded all of our firewalls and routers at a cost of approximately $200,000
- Completed half of our CA Position Replacement Program, with a completion planned for 3Q1012 at a total cost of $1,000,000

Here is a list of the equipment we now include in our system architecture for the AT&T Relay Service Private Network:
- More than 350 Communications Assistant positions, including those for training and monitoring

- 3 Avaya Aura telephony switches

  o 6 Avaya Call Control Servers

  o 6 CTI Servers

  o Remote AVAYA G-450 Media Gateway

- Cisco Intelligent Call Routing System deployed on multiple redundant VMware servers.

- 4 Avaya adjuncts supporting COC feature

- 2 CSIDS Servers. Shared Operator Service functions providing Directory Assistance and emergency number access

- Network Firewalls: interface with the IP/IM (Internet) Call Servers and Relay Call Centers:

  o 5 SonicWall 200

  o 8 SonicWall Pro 230 (4 as spares)

- Network Servers:

  o 4 General Use Installation Servers. IBM XSERIES 3650 , OS= Linux RHEL5

- 20 Service Control Units (SCU) for use as Call Center Servers. IBM XSERIES 3650 , OS= Linux RHEL5

- 3 IP Development Servers. HP ProLiant DL360, OS = RedHat Linux, CPU = Pentium 3

- 1 Customer Interface Server. HP ProLiant DL360, OS = Windows, CPU = Pentium 3

- 2 Billing Servers. SUN FIRE V880. OS = Solaris 5.9

- 13 Internet Call Servers,

    * 10 IM Call Servers. HP ProLiant DL360. OS = RedHat Linux, CPU = Pentium

    * 3 IM Internet Control Servers. IBM XSERIES 3650 , OS= Linux RHEL5

- Network Routers:

    - 17 Cisco 2600 Routers/ISDN/T1/56K cards

    - 3 Cisco 3600 Routers ISDN PRI/T1 cards

- Network Switches/Hubs:

    - 4 Cisco 2900 series switches (4 for WAN, plus call center LAN switches)

The benefits of our flexible configuration include the ability to

- Quickly react with any modification necessary to meet your requirements because we maintain a staff of in-house software developers who support the relay platform.

- Customize our system to meet caller needs expeditiously, without the time and cost associated with a special development project.

- Maximize speed of answer by networking all our call centers together and having a central call routing system that monitors call answer conditions in each center. Our central database reporting system allows us to report on a particular call type no matter where that call was handled in the system. Having a single point of call routing at the front-end of the system and a single point of call routing at the back-end of the system enables us to treat the entire call center complex as a single virtual call center. Other providers may claim to be the only one who can support your relay traffic if a call center fails, but this is simply not true. AT&T can certainly accommodate, with no perceptible effect, the loss of a call center.

- Instantly route calls away from a center that is undergoing a service recovery event. One example of a service recovery event is when a fire drill forces the CAs

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to evacuate their positions. When CAs log off their positions, the central call router automatically routes this traffic to another relay center.

* Route calls based on call type and caller profile information. This ensures that the call is routed to a properly trained CA and that the CA has the information needed to handle the call.

The relay platform used by AT&T is the most functionally equivalent in the relay industry today. No other current relay provider's platform matches AT&T in terms of functional equivalence. Our team of engineers and developers are solely dedicated to supporting the relay organization which allows them "live and breathe relay." As a result, the relay platform was engineered with the goal of enabling the highest level of functional equivalence. For example, our upfront automation allows the TTY caller to directly enter the number s/he wishes to call in the same manner as a standard voice caller would dial the number s/he wishes to call. The number entered by the relay user then automatically populates on the call detail record allowing for a speedier call setup and, at the same time, decreases the potential for Communications Assistant error in entering the number to be dialed.

The following chart illustrates our relay call step-by-step procedure from point of initiation to completion:

TTY RELAY CALL FLOW DIAGRAM

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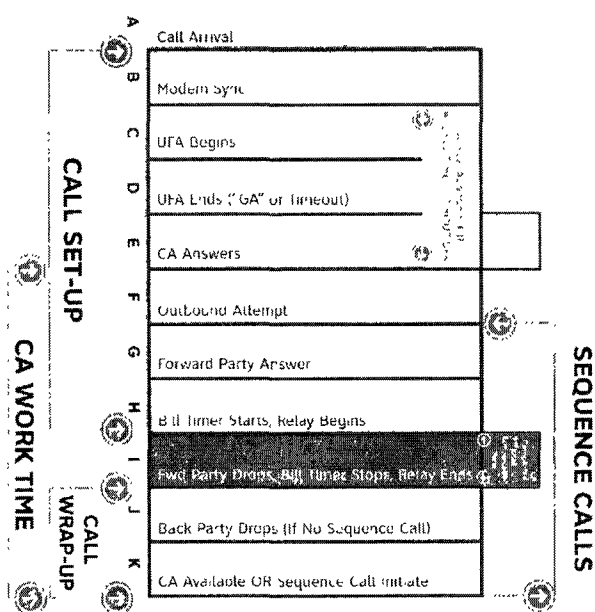
SUMMARY OF CAPTEL PLATFORM ARCHITECTURE

The Captel service depends on interaction between the Captel phone, a telecommunications platform to route the calls to a captionist, and a special transcription application that allows the CA to transcribe the call in real-time.

The Captel platform automatically accepts calls from the PSTN, enforces the appropriate state's jurisdiction rules, locates an available Captel CA with the appropriate skills, places the outbound call, and creates a CDR for each call to support the state's billing and reporting requirements.

Calls arrive from the PSTN at a Captel Data Center. A Captel Data Center houses the SS7 network interface equipment, the databases that check and enforce the state jurisdiction rules, ACD gear to select and route the call to an appropriate agent, and databases that collect call detail records for billing and reporting. Captel operates two data centers one located in Madison Wisconsin and the other in Brookfield Wisconsin in a telecommunications collocation facility (telecom bunker). Each of these data centers includes redundant equipment so that should one piece of equipment fail or need routine maintenance the data center can continue to service calls. Each Captel Data Center also has connections to various network providers, access tandems to support carrier of choice selections, and specialized monitoring equipment to issue alarms and report problems that develop.

Captel calls flow from the PSTN cloud to a Captel Data Centers and then to a Captel Call Center. Captel Call Centers provide the captioning for each call. The call centers include the CA workstations, CA recruiting and training facilities, quality monitoring personnel, and management offices. Each Captel Call Center is connected to both of the Captel Data Centers. Should a Captel Call Center loose its connection to a Captel Data Center it can continue to process calls using the other data center.

The Captel platform also includes a Network Operations Center (NOC) that monitors the health of the equipment, facilities, and service level performance. The NOC uses specialized software applications to issue alerts, alarms, and informational messages to the Captel Operations staff. The staff also uses the NOC to control the routing of Captel calls between the data centers and call centers.
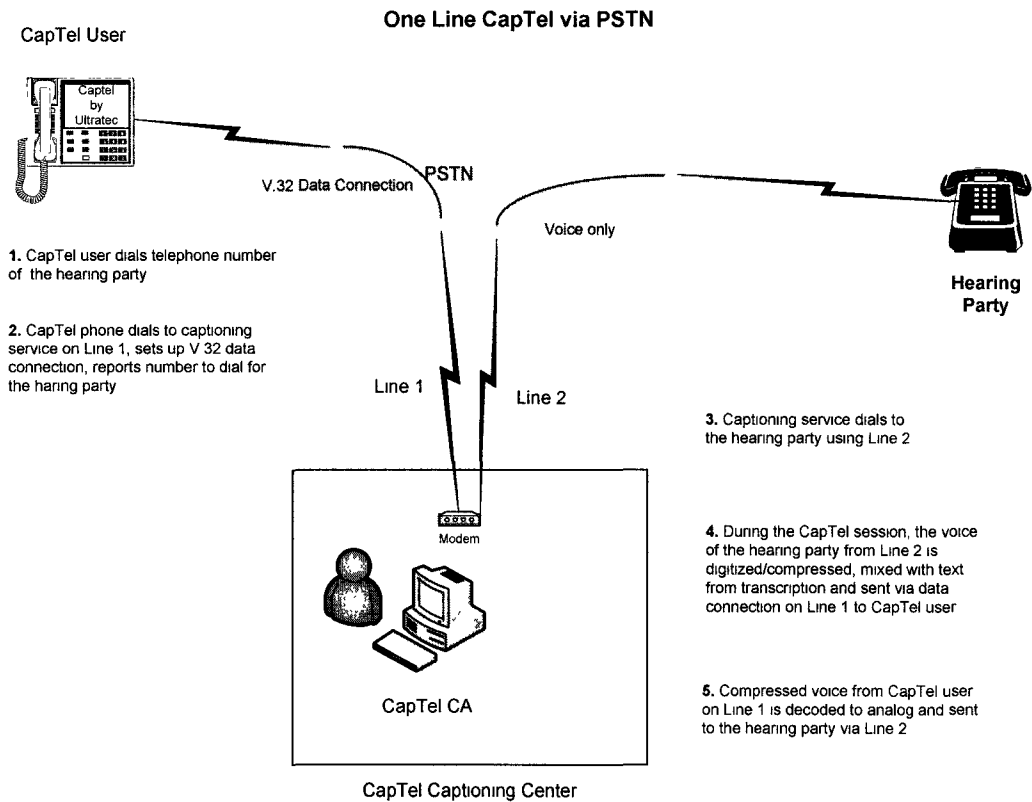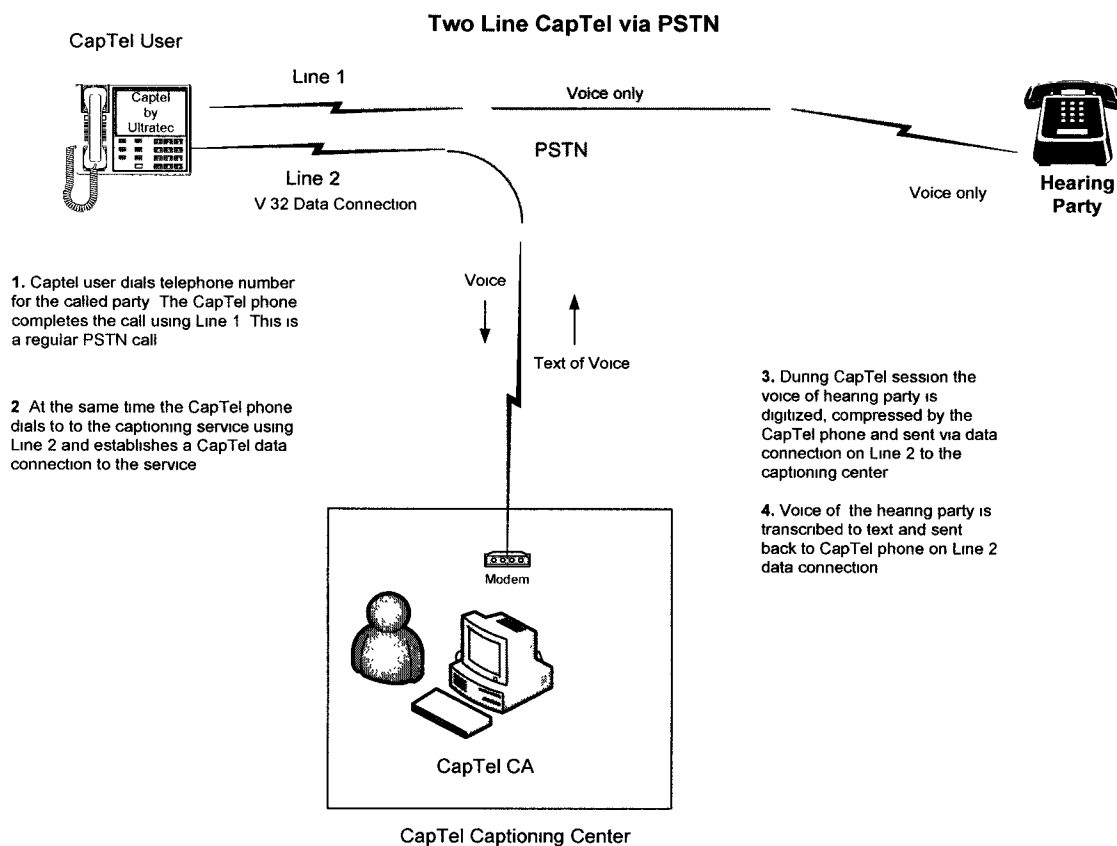
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Captel Call Flow Diagrams

One Line CapTel via PSTN

CapTel User

Captel
by
Ultratec

V.32 Data Connection — PSTN

Voice only

1. CapTel user dials telephone number of the hearing party

2. CapTel phone dials to captioning service on Line 1, sets up V 32 data connection, reports number to dial for the harng party

Line 1

Line 2

Hearing
Party

3. Captioning service dials to the hearing party using Line 2

Modem

4. During the CapTel session, the voice of the hearing party from Line 2 is digitized/compressed, mixed with text from transcription and sent via data connection on Line 1 to CapTel user

CapTel CA

5. Compressed voice from CapTel user on Line 1 is decoded to analog and sent to the hearing party via Line 2

CapTel Captioning Center

Figure 1

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Two Line CapTel via PSTN

CapTel User

Line 1

Voice only

PSTN

Line 2
V 32 Data Connection

Voice only

**Hearing
Party**

1. Captel user dials telephone number for the called party The CapTel phone completes the call using Line 1 This is a regular PSTN call

Voice

Text of Voice

2 At the same time the CapTel phone dials to to the captioning service using Line 2 and establishes a CapTel data connection to the service

3. During CapTel session the voice of hearing party is digitized, compressed by the CapTel phone and sent via data connection on Line 2 to the captioning center

4. Voice of the hearing party is transcribed to text and sent back to CapTel phone on Line 2 data connection

Modem

CapTel CA

CapTel Captioning Center

Figure 2

SUMMARY OF DYNAMIC CALL ROUTING

The Captel platform is normally configured to balance the call traffic between the two Captel Data Centers and the Captel Call Centers. In this mode each Captel Call Center receives approximately fifty percent of the traffic from each of the two Captel Data Centers.   Captel uses preconfigured automatic routing rules or can manually adjust how the calls flow from the PSTN to the Data Centers and from the Data Centers to the Call Centers. These routing controls are used to respond to network failures, equipment issues, local emergencies, or for maintenance events. Captel will use these facilities and tools to control how Colorado Captel calls are distributed to the Captel call centers.

CTI began consumer testing on CapTel throughout the United States in 2002. In 2003 CapTel technology was approved by the FCC enabling individual states to offer CapTel

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as part of their relay services. In January 2004, Hawaii became the first state to offer full service CapTel to its Relay customers. With CapTel available in every state except Delaware, CTI continues to be a leader in the industry.

Captel operates two data centers one located in Madison Wisconsin and the other in Brookfield Wisconsin in a telecommunications collocation facility (telecom bunker). Each of these data centers includes redundant equipment so that should one piece of equipment fail or need routine maintenance the data center can continue to service calls. Each Captel Data Center also has connections to various network providers, access tandems to support carrier of choice selections, and specialized monitoring equipment to issue alarms and report problems that develop.

The Captel platform also includes a Network Operations Center (NOC) that monitors the health of the equipment, facilities, and service level performance. The NOC uses specialized software applications to issue alerts, alarms, and informational messages to the Captel Operations staff. The staff also uses the NOC to control the routing of Captel calls between the data centers and call centers.

The Captel platform is normally configured to balance the call traffic between the two Captel Data Centers and the Captel Call Centers. In this mode each Captel Call Center receives approximately fifty percent of the traffic from each of the two Captel Data Centers. Captel uses preconfigured automatic routing rules or can manually adjust how the calls flow from the PSTN to the Data Centers and from the Data Centers to the Call Centers. These routing controls are used to respond to network failures, equipment issues, local emergencies, or for maintenance events. Captel will use these facilities and tools to control how Colorado Captel calls are distributed to the Captel call centers.

CapTel users will receive functionally equivalent service including but not limited to cost to consumers, call blockage, carrier of choice, real-time communication in transmission and reception of text and speech and the availability of advanced and efficient technology as it becomes available and is technically feasible.

4.1.6.5 Back-up. ⟨ᵤ· ⸳ ⸱ ᴵˢᶦ ⸳ᶦ ᵈⁱ⸳⸳⸳⸳⸱ ⸳ᵢ⸳ ᵈⁱⁱ ⸳⸳·᎐⸳⸳· ⸳ ᵢ⸲ᵗᶜᵏ⸱ᵃⁱ⸱⸳⸳ ⸳ᵢⁱ⸱ ⸳⸳ᵢ ⸳ᶦ ⸳ ⸳ Iₒ ⸳ ⸳ ⸳ ᵃⁱˢᵛˢₒᵢₗ ⸳ᵗ ᵉ᷍⸱ ⸱ᵢₗ⸳ᵗᶜ ᵗₒ ⁱᵐᵒᵗₕₑᵣ ⸱ᵉⁱⁱˢ ⸱ⁱᵉᶦˢᶦᵗ ⸳ⁱᵗ⸳ₛ ⸳ ⸱ᵢᵢᵗᶜᵣⁱᵗ ⸱⸳ᵢₗ⸳ᵉ⸳ ⸱⸳ ᵗⁱ ⸳ ⸲ᵗⁱ⸳ ⸳ ⸳ ⸳ᶜ ⸱⸳ᵉ᷍᷍⸱ ᵢ⸱ᵈ ᵇ⸱⸱ᵈ ᵢₙ ⁱₗ᷍⸳ ˢᵛ ⸱ ⸱⸳ ⸳ ⸳⸳ᵃₒᵗⁱₐ⸱ⁱ ᵃⁱⁱⁱ᷍ⁱ᷍ⁱ ⸳᷍᷍⸱ ⸳⸳⸳ ⁱ ᵖᵗˢⁱ ⁱ ᶦⁱᵢᵗ ⁱₗᵗⁱ ⸳⸱ ᵗⁱ ⸳⸳⸳⸳ ⸳⸳⸳ᵢ ⸱ₐᵢᵗⁱ⸳ᵛ ᵗᵉⁱⁱⁱ ⁱⁱⁱᵏⁱ⸱ᵉ⸱ᵗⁱᵇ⸱ᵇ ⁱ⸱ᵗ ⸳ ⸳ᵖⁱⁱⁱⁱₒₗᵗⁱ⸱ᵗ ⸳⸱ⁱⁱ⸳ᵛ⸱ᵉ⸱ ᵢᵢ ᵗⁱₗⁱ⸳ Oⁱⁱᵉⁱₒⁱ ᵇ⸱⸱⸳⸱ᵖ ⸲⸳⸱ ᵃᵛᵉⁱ⸳⸳ ⁱᴬᵖ ₐ᷍⸱ⁱₒ⸱᷍ ᵢₒᵢₐᵗₛ ₒᵗⁱ ⁱⁱᵗᵏⁱ ⁱₙ᷍⸱᎐ˢ ᵖ⸲ᵣᵗ⸱ ⁱᵢ⸱ₑ᷍ˢ ᵗᵢₑᵣⁱₐⁱ ᵖ⸲ₒᵥⁱⁱⁱˢ ⁱⁱᶠₒᵣⁱ⸲ ᵗⁱₒⁱⁱ ⸳ⁱⁱ ᵢⁱₑ᷍ₙ₍ ᵣ⸳ᵗⁱ ⸳⸱ⁱⁱᵏⁱ⸳᷍⸱ᵛ⸱⸳⸳᎐ₛ ⸳ᵛ⸱ⁱ⸳

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AT&T Response:

AT&T has read and meets this requirement.

We cordially extend an invitation to the State Relay Administrator and the Advisory Committee to visit any of our call centers in order to demonstrate how AT&T exceeds compliance with our back-up systems, redundancy network, and our contingency planning in the event of natural or man-made disasters.

Each call center that will be processing Colorado Relay traffic has emergency power generating equipment that is capable of maintaining our relay centers' operations. We have an uninterruptible power system that supports the switch system and its peripherals, switch room environmental (i.e. air conditioning, fire suppression system, emergency lights and system alarms), the work stations for the CAs and the Supervisors, the emergency lighting system in the center, and the billing and recording systems.

We also have documented plans for dealing with all types of natural and man-made problems (e.g., hurricanes, lightning strikes, fires, etc.) which can isolate the relay center and/or prevent calls from reaching the center or cause the center to be unable to operate. Our Business Continuity Plan provides detailed steps which will be taken to deal with any problems and processes to restore relay service into the affected center. When a center is impacted, we have systems and processes in place that will route calls to non-impacted centers. Our ability to provide service redundancy is second to none.

Redundancy was a core driver in the initial design of the AT&T Special Network Applications Platform (SNAP) for Relay Service.

Within each call center is a bank of servers that manage the various resources required to complete any type (text-based) Relay call. Each call center has 4, 6, or 8 fully cloned, fully redundant service control units – or servers. The system is so intelligent that, if

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power were removed from a server, its workload would be automatically re-allocated among the remaining servers in that call center, all without losing even one call.

These call centers are also equipped with redundant network circuit feeds; redundant controllers; and redundant power supported by large battery banks that auto-switch to a diesel generators during long commercial power outages.

Additionally, we have a dedicated Relay Service Management team that is always on call to support any issues in our centers. These skilled technical managers are employees of AT&T who support AT&T centers. We believe it is important to have our own experienced service management team support our own centers and for this reason, we do not outsource this work.

Captel Service / Service Reliability

The switching system for CTI Captel centers shall include a redundant Central Processing Unit (CPU) on "hot stand-by" to ensure that no calls are dropped due to processor failure, a full Maintenance and Administrative Terminal with keyboard, screen and printer capabilities, on-line monitoring, real time programming capabilities which will not take the system off-line, the ability to perform preventative maintenance without taking the system off-line, and an inventory of spare critical components which are maintained on site to ensure the required levels of service are met.

CTI shall provide a combination of battery backup, commercial UPS supply, and/or auxiliary generator to supply uninterruptible power to the Captel Centers for a minimum of twelve (12) hours.

CTI will provide TRS Provider with a complete plan for dealing with all types of natural and man-made problems including but not limited to terrorism and phone line cut accidents. CTI will notify TRS Provider within 15 minutes if a major problem or total loss of service in excess of 15 minutes occurs. The plan shall detail the level of escalation, which will be employed to deal with the problem and restore service. The plan shall be designed to ensure that no aspect of Captel Service is impaired.

CTI will notify TRS Provider of any disruption in service that lasts more than 30 minutes. CTI shall provide such notification within three hours of the time the disruption begins or by 8:30 a.m. on the next business day if the disruption occurs outside normal business

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hours, which are defined as being from 8 a.m. to 5 p.m., Central Time, Mondays through Fridays.

In its notification of service disruption, CTI shall explain to TRS Provider how the problem will be corrected and give an approximate time and date when relay service will be in full operation.

See disaster recovery plan outlined below:

Captel Service Disaster Recovery Plan

Notification Procedure

Captel, Inc. (CTI) will notify the TRS Provider immediately if there is any type of natural or man-made problem that causes complete (100 percent) loss of the Captel Service Relay Center. Notification will occur after confirmation by CTI that the center is experiencing a problem of such magnitude. Performance at the Captel Service relay center is monitored continuously 24 hours a day, seven days a week.

CTI also will notify TRS Provider immediately of any partial loss of service in *excess of 15 minutes* that is service-affecting. Examples of such a loss in service include an accidental switch rebooting, loss of transmission facilities either through the telephone network, terrorist attack, bomb threat or other Communication Assistant (CA) work stoppage, or sudden loss of CA position capabilities.

CTI plans to provide the Captel service to the TRS Provider from its Captel Service Relay Centers. Captel service centers are currently located in Madison and Milwaukee, WI.

The Captel Service Relay Center is equipped with redundant systems for power, ACD/telecom switching equipment, call processing servers, data network servers, and LAN gear. Most equipment failures can be corrected without complete loss of service.

Complete (100%) Loss of Service Procedure

CTI will assess the problem and contact with the TRS Provider's Technical Representative will be made by telephone (CTI will leave a message for a call back if the Technical Representative is unavailable). After the incident, CTI's contract/program manager will send a follow-up letter and/or email to the Technical Representative to document the occurrence.

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